

Borehole

**22-11-05****Log Event A****Borehole Information**

Farm : <u>BY</u>	Tank : <u>BY-111</u>	Site Number : <u>299-E33-127</u>
N-Coord : <u>45,957</u>	W-Coord : <u>53,542</u>	TOC Elevation : <u>649.42</u>
Water Level, ft :	Date Drilled : <u>8/31/1970</u>	

**Casing Record**

Type : <u>Steel-welded</u>	Thickness : <u>0.280</u>	ID, in. : <u>6</u>
Top Depth, ft. : <u>0</u>	Bottom Depth, ft. : <u>100</u>	

**Borehole Notes:**

According to the driller's records, this borehole was not perforated or grouted.

**Equipment Information**

Logging System : <u>2</u>	Detector Type : <u>HPGe</u>	Detector Efficiency: <u>35.0 %</u>
Calibration Date : <u>03/1995</u>	Calibration Reference : <u>GJPO-HAN-1</u>	Logging Procedure : <u>P-GJPO-1783</u>

**Log Run Information**

Log Run Number : <u>1</u>	Log Run Date : <u>9/9/1995</u>	Logging Engineer: <u>Bob Spatz</u>
Start Depth, ft.: <u>97.5</u>	Counting Time, sec.: <u>100</u>	L/R : <u>L</u> Shield : <u>N</u>
Finish Depth, ft. : <u>27.5</u>	MSA Interval, ft. : <u>0.5</u>	Log Speed, ft/min.: <u>n/a</u>

Log Run Number : <u>2</u>	Log Run Date : <u>9/11/1995</u>	Logging Engineer: <u>Alan Pearson</u>
Start Depth, ft.: <u>0.0</u>	Counting Time, sec.: <u>100</u>	L/R : <u>L</u> Shield : <u>N</u>
Finish Depth, ft. : <u>27.5</u>	MSA Interval, ft. : <u>0.5</u>	Log Speed, ft/min.: <u>n/a</u>



Spectral Gamma-Ray Borehole  
Log Data Report

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Borehole

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Log Event A

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### Analysis Information

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Analyst : P.D. Henwood

Data Processing Reference : P-GJPO-1787

Analysis Date : 3/22/1996

#### Analysis Notes :

This borehole was logged in two log runs. The pre- and post-survey field verification spectra show consistent activities, indicating the logging system operated properly during data collection. Energy calibrations differed because of gain drift in the instrumentation. Gain drifts during data collection necessitated energy versus channel number recalibrations during processing of the data to maintain proper peak identification. A depth overlap, where data were collected on separate days at the same depth, occurred in this borehole at 27.5 ft. The calculated concentrations were within the statistical uncertainty of the measurements, indicating very good repeatability.

The casing thickness is 1/4 (0.250) inch. Casing-correction factors for a 0.25-in.-thick steel casing were applied during analysis.

Cs-137, Co-60, and Eu-154 were the man-made radionuclides identified in this borehole. The presence of Cs-137 was detected almost continuously from the ground surface to about 35 ft and at a few isolated locations in the remainder of the borehole. Eu-154 was detected at about 3 ft, and Co-60 was detected at about 3 and 56 ft in depth.

Additional information and interpretations of log data are included in the main body of the Tank Summary Data Report for tanks BY-110 and BY-111.

#### Log Plot Notes:

Separate log plots show the man-made (e.g., Cs-137) and the naturally occurring radionuclides (K-40, U-238, and Th-232). The natural radionuclides can be used for lithology interpretations. The headings of the plots identify the specific gamma rays used to calculate the concentrations.

A combination plot includes both the man-made and natural radionuclides, in addition to the total gamma derived from the spectral data and the Tank Farms gross gamma log. The gross gamma plot displays the latest available digital data with no attempt to adjust the depths to coincide with the SGLS data.

Uncertainty bars on the plots show the statistical uncertainties for the measurements as 95-percent confidence intervals. Open circles on the plots give the minimum detection level (MDL). The MDL of a radionuclide represents the lowest concentration at which positive identification of a gamma-ray peak is statistically defensible.